WHAT IS CLAIMED IS:

1. An onboard fuel cell system comprising:

a fuel cell which is supplied with hydrogen gas and oxidative gas, which generates electric power using the hydrogen gas and the oxidative gas, and which discharges hydrogen-off gas and oxygen-off gas that have been consumed;

a first flow passage which leads to a hydrogen-off gas exhaust port of the fuel cell and through which the discharged hydrogen-off gas flows;

a second flow passage which leads to an oxygen-off gas exhaust port of the fuel cell and through which the discharged oxygen-off gas flows;

a mixing portion which introduces the discharged hydrogen-off gas and the discharged oxygen-off gas from the first and second flow passages respectively and which mixes the oxygen-off gas with the hydrogen-off gas;

a third flow passage which leads to the mixing portion and through which the mixed gases flow so that the hydrogen-off gas is discharged to the atmosphere.

2. The onboard fuel cell system according to claim 1, wherein

the mixing portion comprises an oxygen-off gas-introducing branch flow passage which branches off from the second flow passage and which introduces the oxygen-

off gas from the second flow passage in a shunted manner and a mixing chamber to which the oxygen-off gas-introducing branch flow passage and the first flow passage lead and which mixes the hydrogen-off gas and the oxygen-off gas with each other and which has such an enlarged volume that the mixed gases can flow into the third flow passage, and

the second flow passage merges with the third flow passage downstream of a location where the second flow passage branches off from the oxygen-off gas-introducing branch flow passage.

3. The onboard fuel cell system according to claim 2, wherein

a pressure-loss member for causing a pressure loss of a fluid flowing through the second flow passage is disposed in the second flow passage between the location where the second flow passage branches off from the oxygen-off gas-introducing branch flow passage and a location where the second flow passage merges with the third flow passage.

4. The onboard fuel cell system according to claim 3, wherein

the pressure-loss member is a muffler.

5. The onboard fuel cell system according to claim 1, further comprising:

a catalytic reaction portion which is disposed in the mixing portion or in the flow passage for the mixed gases past the mixing portion, which causes hydrogen and oxygen contained in the mixed gases to react with each other with the aid of a catalyst, and which reduces the concentration of hydrogen in the gases.

6. The onboard fuel cell system according to claim 5, further comprising:

a gas-liquid separator which is disposed in a passage extending from the mixing portion to the catalytic reaction portion and which removes the mixed gases of their liquid contents.

7. The onboard fuel cell system according to claim 1, further comprising:

a valve which is disposed in the first flow passage and which is opened or closed so that the hydrogen-off gas is allowed to flow into or blocked from flowing into the mixing portion.

8. The onboard fuel cell system according to claim 7, further comprising:

a hydrogen gas-supplying source for supplying hydrogen gas;

a fourth flow passage which leads to a hydrogen gas-supplying port of the fuel cell and through which the

supplied hydrogen gas flows; and

a fifth flow passage which connects a first location in the first flow passage between the exhaust port of the fuel cell and the valve with a second location in the fourth flow passage and through which the hydrogen-off gas discharged from the fuel cell flows to be returned to the fourth flow passage.

9. The onboard fuel cell system according to claim 8, wherein

the hydrogen gas-supplying source contains a hydrogen gas-occluding alloy capable of occluding and discharging the hydrogen gas.

10. The onboard fuel cell system according to claim 9, further comprising:

a pump which is disposed in the fifth flow passage and by which the hydrogen-off gas discharged from the fuel cell is discharged to the fourth flow passage; and

a sixth flow passage through which hydrogen gas flows from the hydrogen gas-occluding alloy to the pump,

wherein hydrogen gas delivered from the hydrogen gas-occluding alloy is supplied to the fuel cell via the pump if the hydrogen gas-occluding alloy is at a low temperature.

11. The onboard fuel cell system according to claim 7,

further comprising:

a seventh flow passage which leads to an oxidative gas-supplying port of the fuel cell and through which the supplied oxidative gas flows;

a flow rate-changing portion which is disposed in the second flow passage or the seventh flow passage and which can change the flow rate of the discharged oxygen-off gas; and

a control portion which controls the valve and the flow rate-changing portion,

wherein the control portion increases the flow rate of the discharged oxygen-off gas from a predetermined flow rate by means of the flow rate-changing portion when opening the valve.

12. The onboard fuel cell system according to claim 7, further comprising:

a seventh flow passage which leads to an oxidative gas-supplying port of the fuel cell and through which the supplied oxidative gas flows;

a flow rate-changing portion which is disposed in the second flow passage or the seventh flow passage and which can change the flow rate of the discharged oxygen-off gas; and

a control portion which controls the valve and the flow rate-changing portion,

wherein the control portion opens the valve by means

of the flow rate-changing portion if the flow rate of the discharged oxygen-off gas is higher than a predetermined flow rate.

13. The onboard fuel cell system according to claim 7, further comprising:

a control portion which controls the valve,

wherein the control portion opens and closes the valve at intervals of a relatively short period when delivering the discharged oxygen-off gas to the mixing portion.

14. The onboard fuel cell system according to claim 7, further comprising:

a flow rate-reducing portion which is disposed in the first flow passage between the valve and the mixing portion, which reduces the flow rate of the hydrogen-off gas flowing from the valve, and which delivers the hydrogen-off gas to the mixing portion.

15. The onboard fuel cell system according to claim 7, further comprising:

a control portion which controls the valve,

wherein the control portion opens the valve if the concentration of hydrogen in the discharged hydrogen-off gas drops below a reference concentration.

16. The onboard fuel cell system according to claim 1, wherein

a diffusion member for diffusing gas flowing out from an end opening of the third flow passage in the radial direction of the opening is disposed at the end of the third flow passage.

17. The onboard fuel cell system according to claim 16, wherein

a shield member is disposed at the end of the third flow passage in such a manner as to cover the end while being spaced therefrom by a predetermined distance, and

the shield member has at least one pore whose diameter is equal to or greater than a predetermined diameter.

18. The onboard fuel cell system according to claim 17, wherein

the shield member is either meshed or punched porously.

19. The onboard fuel cell system according to claim 1, further comprising:

a fourth flow passage which leads to an oxidative gas-supplying port of the fuel cell and through which the supplied oxidative gas flows;

a gas-liquid separator which is disposed in the

second flow passage and which separates liquid contents from the discharged oxygen-off gas; and

a fifth flow passage which leads to the gas-liquid separator and through which the liquid separated by the gas-liquid separator is supplied to the fourth flow passage.

20. The onboard fuel cell system according to claim 1, further comprising:

a fourth flow passage which leads to an oxidative gas-supplying port of the fuel cell and through which the supplied oxidative gas flows; and

a water-vapor exchanger which exchanges water vapor between oxygen gas supplied to the fuel cell via the fourth flow passage and oxygen-off gas discharged from the oxidative gas exhaust port of the fuel cell via the second flow passage.

21. An onboard fuel cell system comprising:

a fuel cell which is supplied with hydrogen gas and oxidative gas, which generates electric power using the hydrogen gas and the oxidative gas, and which discharges hydrogen-off gas and oxygen-off gas that have been consumed;

an exhaust flow passage through which the hydrogen-off gas discharged from the fuel cell or a gas containing the hydrogen-off gas is discharged to the atmosphere; and

a diffusion member which is disposed at an end of the exhaust flow passage and which diffuses a gas flowing out from an opening at the end of the exhaust flow passage in the radial direction of the opening.

22. The onboard fuel cell system according to claim 21, wherein

a shield member is disposed at the end of the exhaust flow passage in such a manner as to cover the end while being spaced therefrom by a predetermined distance, and

the shield member has at least one pore whose diameter is equal to or greater than a predetermined diameter.

23. The onboard fuel cell system according to claim 22, wherein

the shield member is either meshed or punched porously.

24. A method of discharging hydrogen-off gas to the atmosphere in a onboard fuel cell which is supplied with hydrogen gas and oxidative gas, which generates electric power using the hydrogen gas and the oxidative gas, and which discharges hydrogen-off gas and oxygen-off gas that have been consumed, comprising the steps of:

mixing the hydrogen-off gas discharged from the fuel cell with the discharged oxygen-off gas; and

discharging the mixed gases to the atmosphere.

25. The method according to claim 24, wherein

the step of mixing the gases comprises the steps of introducing the hydrogen-off gas discharged from the fuel cell into a mixing chamber having an enlarged volume from a first flow passage through which the hydrogen-off gas flows, introducing the oxygen-off gas discharged from the fuel cell into the mixing chamber from a branch flow passage branching off from a second flow passage through which the oxygen-off gas flows, and discharging the gases mixed in the mixing chamber to a third flow passage leading to the mixing chamber, and

the step of discharging the mixed gases comprises the steps of merging the second flow passage with the third flow passage downstream of a location where the branch flow passage branches off from the second flow passage and discharging the gases to the atmosphere.

26. The method according to claim 24, wherein

the step of discharging the mixed gases comprises the steps of causing hydrogen and oxygen contained in the mixed gases to react with each other with the aid of a catalyst so as to reduce the concentration of hydrogen in the gases and discharging the gases whose concentration of hydrogen has thus been reduced to the atmosphere.

27. The method according to claim 24, wherein

the step of mixing the gases comprises the step of increasing the flow rate of the oxygen-off gas discharged from the fuel cell from a predetermined flow rate when mixing the hydrogen-off gas with the oxygen-off gas.

28. The method according to claim 24, wherein

the step of mixing the gases comprises the step of mixing the hydrogen-off gas with the oxygen-off gas if the flow rate of the oxygen-off gas discharged from the fuel cell is higher than a predetermined flow rate.

29. The method according to claim 24, wherein

the step of mixing the gases comprises the step of mixing the hydrogen-off gas with the oxygen-off gas at discrete timings that are arranged at intervals of a relatively short period.

30. The method according to claim 24, wherein

the step of mixing the gases comprises the steps of reducing the flow rate of the hydrogen-off gas discharged from the fuel cell and mixing the hydrogen-off gas whose flow rate has thus been reduced with the oxygen-off gas.